MODIS sensor Working Group (MsWG) Meeting Summary Jan. 7, 2009

Attendance: Gary Toller, Bill Barnes, Aisheng Wu, Junqiang Sun, Gerhard Meister, Gene Eplee, Jenn Dodd, Ben Ripman, Hongda Chen, James Kuyper, Kurt Thome, Sadashiva Devadiga, Chris Moeller, Jack Xiong, Brian Wenny

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Scheduled Agenda

Item 1: Recent L1B LUT delivery

- Terra forward update – 5.0.40.14 (12/12/08) – m1 & RVS
- Terra forward update – 5.0.40.15 (12/22/08) – m1, RVS & dn_sat_ev
- Aqua forward update – 5.0.35.8 (12/11/08) – m1, RVS & dn_sat_ev

Item 2: Instrument status

- Terra and Aqua MODIS are in nominal operations.
- Terra non-recoverable data loss: The Terra Science Formatting Equipment spontaneously powered down at ~05:00 on 2008/355 (12/20). This anomaly was different from the previous SEU (Single Event Upset) anomalies, so FOT made extra effort to assess the spacecraft health before re-enabling the SFE. The SFE was turned on successfully at ~21:15 on 2008/357 (12/22) and monitored until ~16:00 on 2008/358 (12/23) when nominal science mode operations was resumed. Data loss times are 355/04:48:48-358/16:10:47. This was a spacecraft issue not a MODIS issue so no impact was expected on MODIS science data.
- In early December 2007 Aqua experienced an anomaly with the SSR partition 6 resulting in a data loss over a 5 day period. FOT implemented a temporary fix at the time which has been in place and working effectively since then. FOT is proposing to implement a permanent fix towards the end of Jan or early Feb and is in the process of notifying instrument teams. No major impact is expected for MODIS beyond a data loss of a few minutes at most due to a loss of spacecraft housekeeping and GBAD data.

Item 3: MCST recent activities

- Modified baseline Collection 6 LUTs were delivered to L1B, correcting a few minor issues noticed in the test data after the initial baseline delivery. Test granules have been produced and are under analysis by MCST. It is expected this delivery will be approved and officially forwarded to L1B by the end of this week (1/9/2009). No updates on when v6 science testing is scheduled to begin.
- Aqua RVS with SD, Moon, and SRCA data: Junqiang showed the Aqua band 8 RVS derived from the SD, Moon, and SRCA data with a quadratic approximation for RVS on-orbit change. He compared the new results with the current V5 Aqua band 8 RVS. The two sets of RVS agree well at the AOI of the SV as expected. The new RVS is about 2% lower than the V5 RVS at AOI of the NADIR since the Aqua MODIS second year on orbit. This can not explain the SeaWIFS observation that Aqua band 8 radiance has a 2% sudden decrease in 2008. MCST and SeaWIFS agreed that the RVS derived with the new approach will not be applied for Aqua band 8 calibration.
- MODIS Aqua trending issues: Gerhard showed the nLw ratio of Aqua RSB compared to SeaWIFS. They observed a 'mid-mission' dip in the ratio and a recent drop in the ratio of Aqua band 8. He also showed that a time-dependent RVS may need to be applied for Aqua band 13.
- The impact of the Terra SFE anomaly on MODIS data was assessed. All RSB (m1, SNR), TEB (b1, NEdT), and telemetry performance trending showed no unexpected differences after the anomaly in comparison to pre-anomaly behavior. No impact of the anomaly on the MODIS calibration quality was detected.
    - Terra Band 36 D7 (currently flagged as a 'Noisy' detector) has a repeat incidence of anomalous behavior previously reported in July 2008. For a period of ~23 hours

after science operations resumed the DN for all sectors of this detector switched between counts of 0 and 4095 at regular intervals – resulting in uncalibratable data and a fill value in the L1B product. The proposed action to set the QA flag for Terra B36 D7 to 'Inoperable' for the period 2008/358.1805-359.1745 was agreed to by all present. MCST will deliver a QA LUT update during the next regular Terra update.

Item 4: Around the Table

- Jack: Senior review proposals for both Terra and Aqua are due in March.
- Bill: New email – wlbarnes9@gvtc.com
- Chris: Wisconsin is developing an adjustment to the destriping algorithm and requests information on the way noisy detectors are identified. An off-line discussion with MCST will be setup. For next MsWG, a package discussing his investigation of out-of-band effects in bands 33-36 will be presented.

Next Meeting: ~January 21, 2008